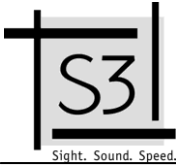




SonicVibesTM **User's Guide**



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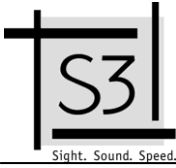
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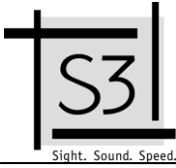
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1. INTRODUCTION

Welcome to the S3 SonicVibes™ Experience

S3 Incorporated, long noted for our 2D and 3D video accelerators, is pleased to welcome you to our latest acceleration technology, the SonicVibes PCI Audio Accelerator. This Sound Blaster Pro® legacy games compatible device features S3FM for games compatible FM synthesis, 32 oscillators for General MIDI (Music Instrument Device Interface) and DLS-1 wavetable synthesis and the latest in SRS® 3D surround sound. Combined with Plug and Play and the wide-band, burst powered PCI bus, the S3 SonicVibes builds a profoundly new sound experience upon a fully, legacy games compatible foundation.

The SonicVibes features an MPU-401 MIDI UART, a standard PC compatible game port and software support for Microsoft® Windows® 95 and legacy DOS applications (games). This support includes Microsoft DirectSound® compatible acceleration via the PCI bus and Microsoft DirectMusic™ acceleration for downloadable sounds using system RAM.

The SonicVibes is fully compatible with the Microsoft multimedia utilities included with Windows 95 and adds the capabilities of Downloadable Sounds to the MIDI interface.

PCI

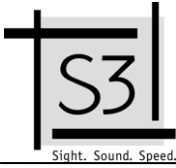
The Peripheral Component Interconnect (PCI) bus is a high-speed bus allowing the local connection of compatible devices to both main memory and the processor. The PCI bus's high speed and other capabilities, such as 32-bit DMA bus mastering, allow PCI devices to perform at levels far beyond their older ISA (Industry Standard Architecture) predecessors. SonicVibes is fully compliant with the PCI Local Bus Specification Revision 2.1 standard.

DLS

DLS stands for **D**ownloadable **S**ounds. The DLS standard combines the bandwidth economy of General MIDI with the depth and richness of high quality PCM (Pulse Code Modulation) sound waves. A DLS file contains a collection of sounds each of which has a sound wave and some playback instructions associated with it. Stored on disk, a DLS file can be loaded into a DLS compliant engine (i.e., a wavetable sound device) where it serves as the basis for music and sound playback.

The S3 DLS Manager

The SonicVibes includes full compliance with the DLS-1 standard for wavetable synthesis. Included with your SonicVibes package is the S3 DLS Manager, a Windows 95 utility program for loading and unloading DLS files into system memory allowing you to open, inspect and edit DLS file sounds. For more information about DLS files and the S3 DLS Manager, see "Using DLS Manager".



2. USING THIS MANUAL

We have organized this manual into the following sections:

1. Introduction – Gives an overview of your SonicVibes sound card and software
 2. Using this Manual – This section
 3. Installation – Describes how to install the SonicVibes sound card in your computer and how to install the included software
 4. Using the SonicVibes Software – Discusses how to use the SonicVibes software to configure the SonicVibes sound card
- Appendix A. Configuring Windows 95 Multimedia – Describes how to use the utilities available with Windows to configure SonicVibes
- Appendix B. Using the Windows Audio Mixer – Describes how to use the Windows Volume Control applet to control the input to and the output from SonicVibes
- Appendix C. Using SonicVibes with Games – Discusses how to configure games to use the SonicVibes sound card
- Appendix D. Technical Features – Details about the SonicVibes performance capabilities

Also, in this manual we assume you have a general familiarity with using Microsoft Windows 95 and the common controls and selectors it provides. We also assume that you have a CD-ROM drive as part of your computer system.

When text is to be entered from the keyboard, we will show that text in all uppercase, such as shown below:

When referring to items selected from a menu, we will reference the menu name and the item, separating them with a vertical bar, "|". For example, to represent selecting Accessories from the Programs menu, we will use the following:

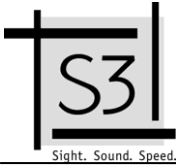
Programs | Accessories

Similarly, if an item selected from a menu is also a menu or a list we will continue separating the menu and item with the "|". For example:

Programs | Accessories | Multimedia | Volume Control

Finally, any special note or warning will have a box around it as shown below:

NOTE! The line-out (speaker) jack, line-in and microphone jacks require 1/8"(3.5mm) mini-jack external connectors.



3. INSTALLATION

Preparing to Install

You will need to have the following items at hand to install your SonicVibes sound board:

1. The board itself (do not remove the board from the anti-static plastic wrapper until you are ready to install into the computer)
2. The S3 SonicVibes CD-ROM

Before beginning the installation, you will need to determine if there is already a sound device installed on your system. If there is, you will need to remove both the board and its controlling software. Please refer to your sound board's documentation for information about removing your old board and drivers.

NOTE! If your system motherboard has a built-in sound device, you may experience difficulties in disabling it. Failure to disable the sound device may create a conflict with your SonicVibes board causing neither to work. Refer to your motherboard and BIOS documentation for instructions on disabling the built-in device.

You will also need an empty PCI slot. If you are uncertain if an available slot is a PCI slot, it may be wise to refer to your computer's documentation. Generally, a PCI slot is a small (approximately 3¼ inches) slot colored a pale tan.

Installing the SonicVibes Board

1. Make sure that your computer is off and unplugged.
2. Following documentation which came with your system, remove the outer cover. If you already have a sound board, remove it too. This may include unplugging the audio connector to a CD-ROM.
3. Next, identify an empty PCI slot and remove its expansion slot cover. Retain the screw for installing the SonicVibes board later.
4. Now remove the SonicVibes board from its wrapper.

NOTE! Take care that you are properly grounded. **Static can damage the board.** Ground yourself by touching a metal surface before handling the board. Always hold the board by the edges and avoid touching the metal contacts on the bottom of the board and any surface components. If one is available, use a static ground strap.

- Connect your CD-ROM drive output audio connector to the CD input connector found at the top middle of the SonicVibes board.

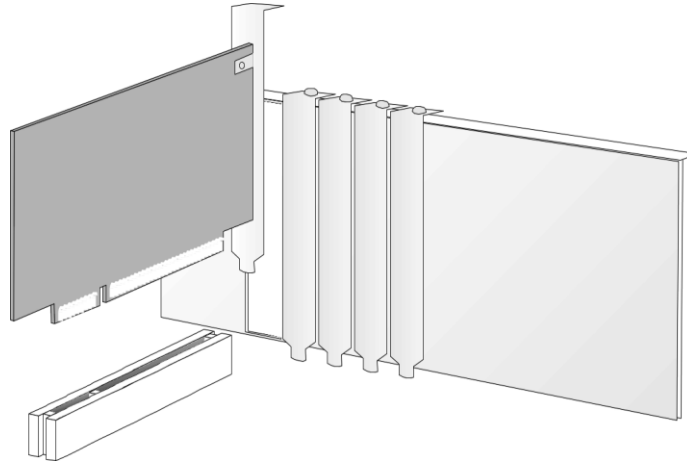


Figure 1

- Gently but firmly insert the board into the PCI slot, taking care that the board is fully inserted and the bracket aligned in the expansion slot left open when you removed the slot cover. Next, secure the bracket by attaching the screw previously used with the slot cover.

NOTE! Components on a PCI board are installed on the opposite side of components on other, non-PCI adapter boards. The SonicVibes board is correctly designed to be inserted this way. On some systems, a slot is “shared” between an ISA board and a PCI board. This means that they are so close that either the ISA slot or the PCI slot is occupied, **not both**. This is normal.

- You can now plug your speakers into the SonicVibes board. The speaker jack is identified on the bracket by the icon shown in Figure 2.
- If you have a joystick, it can be plugged into the joystick/MIDI game port.
- If you have a microphone, it can be connected to the jack which is identified on the bracket by the icon shown in Figure 3.
- You can also attach an external stereo device to identified on the bracket by the icon shown in 4.
- Finally, reattach the computer cover, plug-in the



Figure 2



Figure 3



Figure 4

the jack
Figure

power

supply and restart your computer.

NOTE! The line-out (speaker) jack, line-in and microphone jacks require 1/8”(3.5mm) mini-jack external connectors. You may need adapters to connect your stereo components to the SonicVibes board.

Installing the SonicVibes Software

Your SonicVibes software is designed for use under Windows 95, Windows NT 4.0 and DOS (systems supporting DDMA only). The installation itself is compatible with Windows 95 and NT 4.0. The install program will detect which version of Windows you are using and install the correct drivers. You can also use the install program to remove your SonicVibes software.

Windows 95 vs Windows NT

Where it comes to installing and using hardware devices such as your SonicVibes audio card, there are several important differences between these two Microsoft Windows operating systems.

Plug and Play

The most immediate difference is Windows 95's support for Plug and Play. Plug and Play makes it possible for Windows 95 to detect new devices and to prompt you to install the correct drivers by displaying the dialog shown in Figure 6. Note that your computer BIOS must also support Plug and Play. If it doesn't, Windows 95 will not detect new devices and you will need to start the install program manually. In this case, skip down to "Express Installation" below.

With Windows 95 and a Plug and Play system, when you boot your system after installing the SonicVibes audio card, you will be presented with the dialog shown in Figure 6 below. We recommend that you click on "Do not install a driver (Windows will not prompt you again)" then Press Enter or click on "OK". Continue with the installation at the section titled "Express Installation" below.



Figure 6

Windows NT, on the other hand, does not support Plug and Play and will not be able to detect a new device such as SonicVibes. Again, skip down to "Express Installation" below.

DLS Wavetable Sounds

Downloadable sounds and the DLS Manager are not supported under Windows NT. The install program will detect Windows NT and will only install the drivers for basic multimedia including MIDI and wave playback/recording and CD playback.

Legacy DOS Support

Legacy DOS applications (mostly games) are applications which use outdated methods of adding sound. To provide any support for these, your system must support Distributed DMA and you must use the DOS legacy driver to fool the applications into accepting sound data from the PCI bus. The DOS legacy driver is also not supported under Windows NT and will not be installed.

Installation

The installation should be started by the START.EXE program on the root directory of your SonicVibes CD. START.EXE will detect which version of Windows, 95 or NT 4.0, you have and present you the installer program appropriate for your operating system. Please note that the figures below are from Windows 95. What you see under Windows NT will be similar except you will not be offered the options of installing the DLS Manager and the DOS Legacy driver. These are not supported under Windows NT.

Express Installation

This method is preferred because it provides you with a single interface from which you can install all components of the S3 SonicVibes software package.

Begin by inserting your SonicVibes CD into your CD-ROM drive (usually drive D). If, under Windows 95, you have checked "Auto insert notification" in your CD-ROM properties (it is the default under Windows NT), the window shown in Figure 7 will be displayed. If not, you can start the install program by using "Run" from the Start menu and typing: D:\START.EXE.



Figure 7

The S3 SonicVibes Installer allows you to select the Windows components of the SonicVibes software you want installed as well as allowing you to view the release note, README.TXT, to view this manual using either Microsoft Word for Windows 95 or the WordPad, and to browse the SonicVibes CD.

The Installer will install and configure the following:

Driver

The driver installation includes everything necessary to prepare SonicVibes for general use under either Windows 95 or Windows NT. Selecting Driver from Setup will bring up the next window, Figure 8. Select "Install/Update Windows drivers" and, if you have a machine supporting Distributed DMA (DDMA), select "Install DOS utility" also. References to the DOS utility will not appear when installing for Windows NT.

After checking the appropriate boxes, press Enter or click on OK to continue the installation or Cancel to quit and return to the main setup program (Figure 7). When the drivers have been installed for Windows 95, you will be asked if you

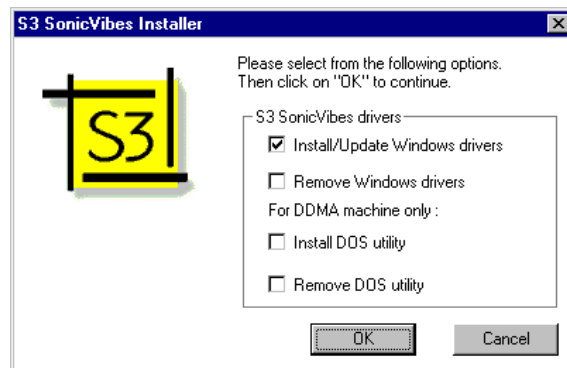


Figure 8

wish to configure your system for Downloadable Sounds. Selecting "Yes" will bring up the SonicVibes Control Panel applet. See Section 4, "Using the S3 Audio Control Panel Applet" allocating memory and selecting the default MIDI device.

Some changes will not take place until you reboot your computer.

You can also use this interface to remove both the Windows and DOS drivers.

NOTE! On some systems, you will not see Figure 8 but will first see a dialog to remove the Windows drivers after which you will see a dialog to install the new drivers.

AudioStation® 2

Selecting this will start the setup program for the Voyetra® AudioStation 2. The AudioStation 2 provides sophisticated Windows sound mixing and playback of CD music, WAV's and MIDI. The Voyetra setup program will lead you through the installation and allow you to select the folder into which to install the AudioStation 2. When complete, it will return you to Figure 7.

DLS Manager (Windows 95 Only)

Selecting this will begin the installation of the S3 DLS Manager.

Simply follow the instructions included with the installation. When complete, it will return you to the main setup program (Figure 7). When you exit Setup, you will need to restart your computer for all of the changes to take place.

Finishing the Installation

Once you have completed installing all components, select "Exit" to complete the installation. The install program will give you the option of having it reboot your system or letting you reboot later (see Figure 9). Click on Finish to either reboot or continue with the setup.

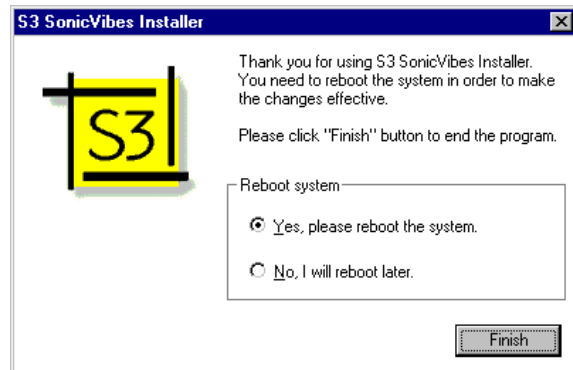


Figure 9

Individual Installations

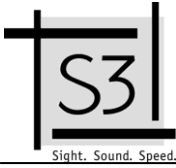
While not as simple as the Express Installation above, this allows you to individually and selectively install each component of the SonicVibes software package.

Driver (Windows 95)

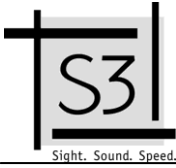
Referring back to Figure 6, select "Driver with disk provided by hardware manufacturer" by checking the radio button in front of it and clicking "OK".

You will now be prompted to place a disk into drive A. Click on "Browse" and select your CD-ROM drive (usually drive D). Browse to "D:\Win95\English" (or, for international versions, your preferred language); this is where the setup file, S3AUDIO.INF, is located. Press Enter or click on "OK" when done. Simply follow the on-screen instructions to complete the installation and reboot your computer.

Driver (Windows NT)



Insert the SonicVibes CD in your CD-ROM drive. Windows will automatically start the install program as described for the Express Installation above. Alternately, you can select "Run" from the "Start" menu and enter: `cdrom\i386\setup.exe` (use the language directory correct for your installation.) This will start the driver setup program (see Express Installation, Driver above).



DOS Legacy Driver (Windows 95 Only)

There is no separate installation program for the DOS legacy driver. We recommend that you follow the Express Installation instructions for the driver installation. With the dialog shown in Figure 8, check "DOS Utility Install" then press Enter or click on "OK".

It is also possible to install the DOS utility by using "Run" from the Start menu and entering: `.....` (or, for international versions, your preferred language). This will lead you directly to Figure 8. Again, with the dialog shown in Figure 8, check "DOS Utility Install" then press Enter or click on "OK".

NOTE! If your system does **NOT** include DDMA support, Legacy, games compatible digital audio will not play in games run in real-mode DOS.

Alternatively, you can copy S3LEGACY.COM (located on the SonicVibes CD in the DOS subdirectory) to your hard drive into some directory, for example your Windows directory. Then you must add the following line to your AUTOEXEC.BAT:

AudioStation 2

With the SonicVibes CD in your CD-ROM drive, start the Voyetra AudioStation 2 install program by using "Run" from the Start menu and typing: `D:\VOYETRA\SETUP.EXE`.

DLS Manager (Windows 95 Only)

The DLS Manager setup program, SETUP.EXE, will allow you to select the directory or folder where the DLS Manager is to be installed. Other than that, setup will completely install the S3 DLS Manager and configure your system to use it.

If you have just installed the SonicVibes audio card and have been prompted with Figure 6, the easiest method to install the DLS Manager is to follow the Express Installation above and only select the DLS Manager installation.

Otherwise, if the SonicVibes drivers have already been installed or if you select "Do not install drivers", place the S3 SonicVibes CD-ROM in your CD player (usually drive D), select Run from the Start Menu and type: `.....` You will be only asked to select the folder into which the DLS Manager is to be installed.

4. USING THE SONICVIBES SOFTWARE

Once installed and recognized in Windows 95, your SonicVibes audio card is configured and controlled by both the software included with the SonicVibes package and standard Windows 95 multimedia applications. The following sections discuss using the included software to configure SonicVibes.

Using the S3 Audio Control Panel Applet



After installing the SonicVibes board and software, you will see the S3 Audio icon in the Control Panel. This is used to

configure your system resources, in this case available memory, to use General MIDI and Downloadable Sounds (DLS).

NOTE! Under Windows NT, only the General MIDI dialog will be available. The other settings displayed in Figure 10 are not available for NT.

When you double-click on the S3Audio icon, you will see the dialog shown in Figure 10.

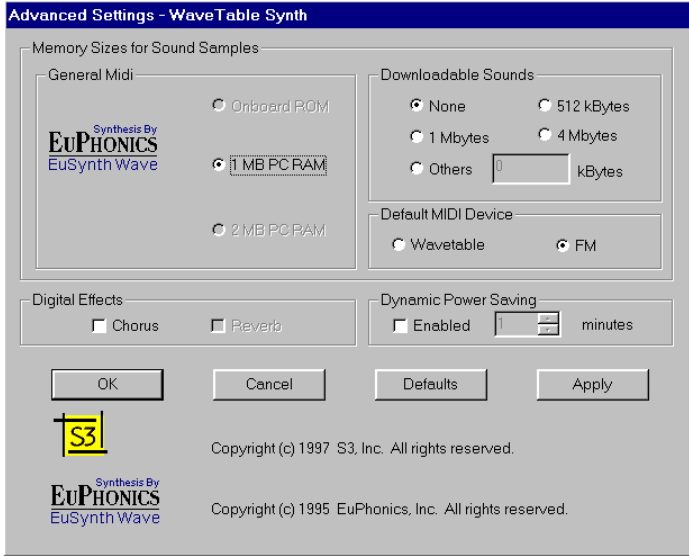


Figure 10

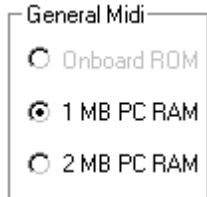
Memory Sizes for Sound Samples

This dialog is used to determine how memory is to be allocated for:

1. General MIDI
2. Downloadable Sounds

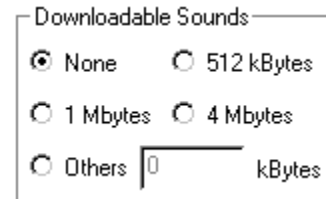
General MIDI

By default, your SonicVibes stores the basic General MIDI instruments in "1MB PC RAM", and the instruments are loaded into system RAM at the start of Windows. Depending on the General MIDI patch set(s) provided or if a ROM is present on your SonicVibes board, you can select among the highlighted General MIDI options available to you. For example, the 2MB PC RAM option will be ghosted if a 2MB General MIDI patch set was not provided with your SonicVibes board. The Onboard ROM option is ghosted if no physical ROM component is present on your SonicVibes board.



Downloadable Sounds (Windows 95 Only)

A DLS file contains a collection of sounds. Each sound has a sound wave and some playback instructions associated with it. Stored on disk, a DLS file can be loaded into system memory where it serves as the basis for music and sound playback when used by a wavetable sound device – the SonicVibes sound card.



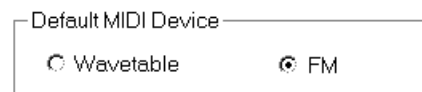
This section allows you to allocate the amount of memory for storing DLS files. By default, no memory is allocated but you can also choose between:

1. 512 Kbytes
2. 1 Mbytes
3. 4 Mbytes
4. Other (this allows you to specify the exact amount you want made available)

When you change the amount of memory for DLS sounds and select either Apply or OK, the changes will not go into effect until Windows is restarted.

Default MIDI Device (Windows 95 Only)

This allows you to determine how SonicVibes will playback MIDI files. You will need to select Wavetable for DLS sounds to function correctly.



Wavetable

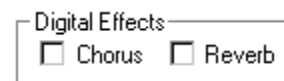
When configured for wavetable MIDI playback, SonicVibes will use either its default General MIDI patch set or downloadable sounds for MIDI playback. This is required for DLS sound playback.

FM

When configured for FM MIDI playback, SonicVibes will emulate General MIDI sounds using FM synthesis instead of using its wavetable capabilities.

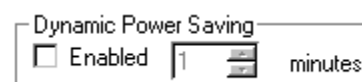
Digital Effects (Windows 95 Only)

There are two special digital effects which can be activated/deactivated from within the SonicVibes control panel: Chorus and Reverb. Chorus adds depth to the synthesizer sounds, while reverb will make the MIDI instruments sound as if they were being played in a large auditorium. By default, these are both inactive. To activate, place a check in the check box and click on "Apply".



Dynamic Power Saving (Windows 95 Only)

SonicVibes supports PCI power saving. Enabling this allows you to set how many minutes of inactivity will elapse before SonicVibes powers down.



Changing the Settings



Once you have selected the memory configurations and other settings, you can return them to their defaults by clicking on “Defaults”. The “Cancel” button will undo any current changes and then exit the S3 Audio control panel applet.

Clicking on “OK” or “Apply” will enable the settings used by S3 Audio. “OK” will also exit the S3 audio control applet. Any changes made to the memory configurations will not take effect until you restart Windows.

Using DLS Manager (Windows 95 Only)



Before using the DLS Manager, you must configure your SonicVibes system to use DLS collections (see “Using the S3 Audio Control Panel Applet” for information about how to allocate memory for the downloadable sounds and to configure for wavetable General MIDI synthesis).

Use the DLS Manager to access DLS files and load them into the system memory allocated for SonicVibes. You can also use it to edit/modify any instrument's name, bank number and patch number.

When you first start the DLS Manager you will see two window panes (see Figure 11). On the right hand side, you will see the default General MIDI patch set represented. The left panel will be blank since a DLS file has not yet been opened.

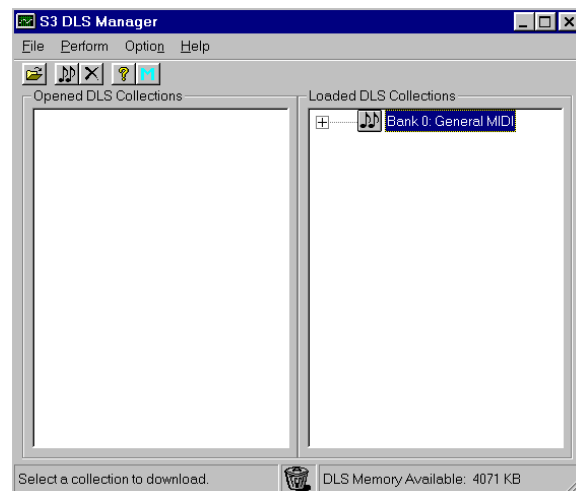


Figure 11

Opening a DLS File

You open a DLS file by selecting “File | Open...” from the main menu or by clicking the open file button on the toolbar. You will then be given the standard Windows screen for opening a file from which you can navigate to the folder containing the DLS file you wish to load.

When a DLS file is successfully opened, the collection name will be displayed on the “Opened DLS Collections” window (see Figure 12).

In the same manner, you can open multiple DLS files into the DLS Manager.

Expanding and Collapsing the Collection

The collection can be expanded to display each instrument with name, bank number and patch number as displayed in Figure 12. To expand the collection, double click on the collection name. To collapse the collection, double click on the opened collection name.

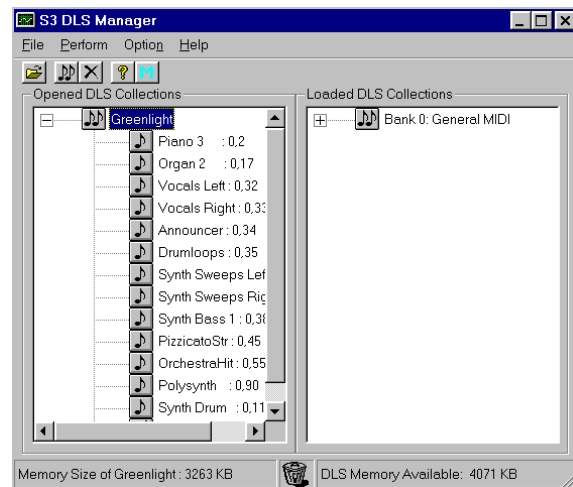


Figure 12

Determining Memory Requirements

Different DLS collections will require differing amounts of system memory to be dedicated to DLS. To determine a collection's memory requirements, highlight the collection in the Opened window by clicking on it and the memory requirement will be displayed on the Status bar at the bottom of the applet window. You will not be able to download a collection if you have not configured enough memory using the S3 Audio Control Panel Applet (see “Using the S3 Audio Control Panel Applet”).

Downloading the Collection to SonicVibes

If there is sufficient memory to load a collection for SonicVibes, simply highlight the collection and, using the mouse, drag it into the “Loaded” window and release it, or press the Download a Collection button from the toolbar, or choose “Download a Collection” from the “Perform” menu. It will change color to indicate that it has been accepted by SonicVibes.

Collections can be modified, but not while they are downloaded. While not downloaded you can edit each instrument's name, bank number or patch number (see below).

Check the Memory Size of a Collection

To get a collection's memory size, click the collection node. The memory size that this collection needs will be displayed on the status bar.

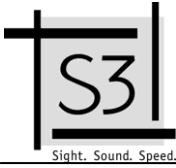
Check the Memory Size of an instrument

To get an instrument's memory size, click on the instrument node. The memory size required by the instrument will be displayed on the status bar.

Unloading the Collection

To unload a collection from SonicVibes, simply highlight it by clicking on it with the mouse and either press the Delete key or drag it to the Waste Box (located near the middle of the status bar).

You can not close a collection which is currently downloaded to hardware.



Unload All Collections

To unload all collections, choose the “Unload All Collections” option from Perform menu or click the Unload All Collections button from toolbar.

To Edit an Open Collection

A collection or an instrument can only be edited if it is not currently downloaded to hardware. In Figure 12, neither the collection on the left nor any of its individual instruments have been (had anything been downloaded, it would also appear in the right panel). This collection and its instruments can be edited.

Change Bank and Patch Number

To change an instrument's name, bank number or patch number, click the instrument's name field to enter editing status, then type a new name, new bank number and patch number according to the format.

Change Note Number of a Note

To change a note's number, click the note's name field to enter editing status, then type a new number.

To Close a Collection or an Instrument

After opening the DLS file, you can close a collection or an instrument in the Opened window by clicking on it and pressing the Delete key or by dragging it to the Waste Box (located near the middle of the status bar).

Close a Note

To close a note of a drum instrument, drag it to the Waste Box or click it, then press the Delete key.

You can not close a note of a collection which is currently downloaded to hardware.

Unload all Collections

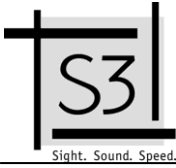
To unload all open collections, you can select the “Unload All” option from the “Perform” menu or click the “Unload All” button on the toolbar.

Other Functions

Get DLS Memory Information

To get DLS memory information, choose “Get DLS Memory Information” from the “Perform” menu or click the “Get DLS Memory Information” button from the Toolbar.

DLS memory information displays the maximum amount of DLS memory in your system, the current available (unused) DLS memory and the largest available buffer of DLS memory.



Compact DLS Memory

After you download and unload several times, some memory holes will develop in DLS memory. The largest memory buffer is the largest amount of contiguous memory remaining into which you can download a collection and may be less than the total available DLS memory. To compact DLS memory, click "Compact DLS Memory" button from the Toolbar or choose "Compact DLS Memory" from the "Perform" menu.

APPENDIX A. CONFIGURING WINDOWS MULTIMEDIA



This section describes how to configure the Microsoft Windows Multimedia system to use SonicVibes.

Multimedia

Click on "Start" and select "Control Panel" from the "Settings" menu. Next, click on the Multimedia icon to start the Multimedia Properties dialog similar to Figure 13 below.

NOTE! You will notice in the Playback section of Figure 13 that there is a check box titled, "Show volume control on the task bar". Checking this box will place a handy volume control in the task bar system tray near the time.

Recording

By default, there are three references against which the quality of the input is rated:

1. Telephone Quality: This is a monaural standard sampling at 11 kHz using 8 bit samples.
2. Radio Quality: This is also a monaural standard sampling at 22 kHz and 8 bits.
3. CD Quality: This is a stereo standard sampling at 44 kHz and 16 bits.

To select one of the defaults, open the Preferred quality list box, highlight your preference and click on "Apply" or "OK".

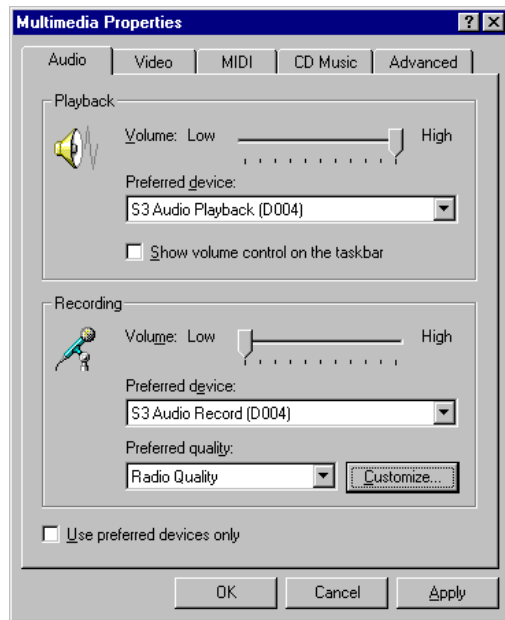


Figure 13

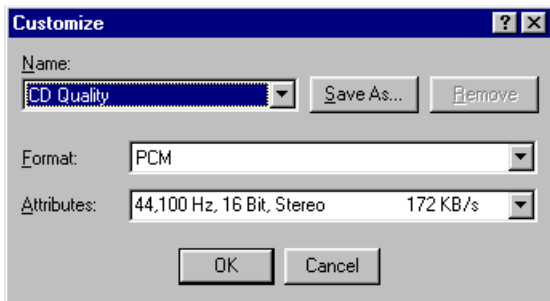


Figure 14

For more precise control over your recording, you can click on "Customize" where you will see the dialog displayed in Figure 14. The Attributes list box contains entries varying from 8,000 Hz, 8 bit, Mono to 44,100, 16 bit, Stereo. Select the attributes which most closely match your input device and click on "OK".

MIDI/DLS (Windows 95 Only)

The next step is to prepare Windows to use General MIDI/DLS with your SonicVibes. This requires you to configure your multimedia MIDI player to use the SonicVibes wavetable capabilities. This can also be set by the SonicVibes Control Panel applet.

Open the Multimedia applet as described above and click on the MIDI tab. This will bring up the MIDI dialog such as seen in Figure 15. By default, the system will use FM synthesis for MIDI playback. This ignores the capabilities of wavetable synthesis and prevents General MIDI and DLS from operating. To select wavetable, simply highlight "S3 SonicVibes Plug and Play Wavetable Synthesizer" and select "Apply" or "OK". You may still need to configure system memory resources before using Downloadable Sounds with your SonicVibes (see "Using the S3 Audio Control Panel Applet").

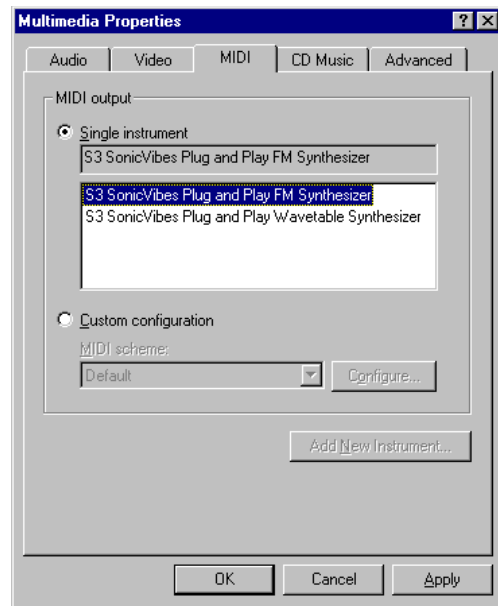


Figure 15

APPENDIX B. USING THE WINDOWS AUDIO MIXER

Windows 95 and NT both include a Volume Control applet among its multimedia utilities. The S3 Audio Mixer uses this applet to set the balance and volume for both playback and recording, allowing independent adjustments to the various input/output controls.

If you have installed the multimedia utilities with Windows, the Volume Control applet is activated by clicking on Start and locating "Programs | Accessories | Multimedia | Volume Control". This will bring up the dialog displayed in Figure 16. If the "Advanced" buttons do not appear, click on Options | Advanced Controls.

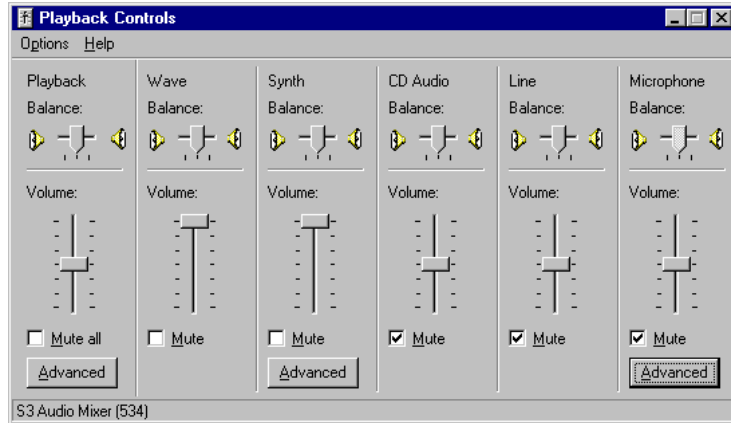


Figure 16

Playback Controls

Each audio source is displayed with controls to change the balance (relative left/right volume), the overall volume and mute. You can control which input sources are displayed by selecting "Options | Properties" and, in the "Show the following volume controls", checking those you wish displayed then clicking "OK". See Figure 20 for an example of this dialog.

Use the Tab key or the mouse to select the balance and volume for a given source.

Balance

Use the left or right arrow keys to adjust the balance (or use the mouse to drag the slider left or right).

Volume

Use the up or down arrow keys to adjust the volume (or use the mouse to drag the slider up or down).

Mute

Placing a check in the "Mute" check box will shut off the volume for that device. Placing a check in the "Mute all" check box will disable sound output from all devices.

Playback

By default, this dialog is to set the playback volume from the various sources and to set the speaker volume as well.

Advanced Settings

Clicking on the Advanced button will bring up the dialog shown in Figure 17.

Tone Controls

These controls are actually used for Space (Bass) and Center (Treble) controls for the SRS Effects (see below)..

Other Controls

Click on the check box to enable SRS Effects (3D surround sound effects). When SRS Effects are enabled, you can use the Bass and Treble sliders in the Tone Controls to adjust the Space and Center levels of the 3D sound effects.

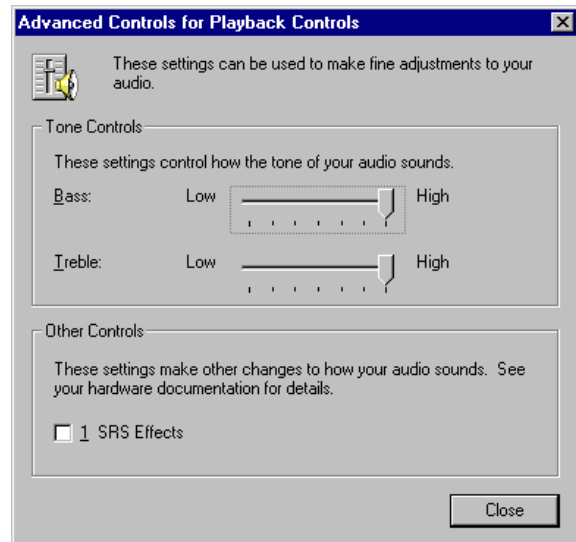


Figure 17

Wave

This set of controls allows you to configure the balance and volume for playback of wave (.WAV) files.

Synth

This set of controls allows you to configure the balance and volume for playback of MIDI.

Advanced Settings

Clicking on the Advanced button will bring up the dialog shown in Figure 18.

Tone Controls

These controls are shadowed to indicate that they have no effect.

Other Controls

Click on the check box to enable Reverb (makes the sound seem as if it was being played in a large auditorium) and Chorus (adds depth to the synthesizer sounds).

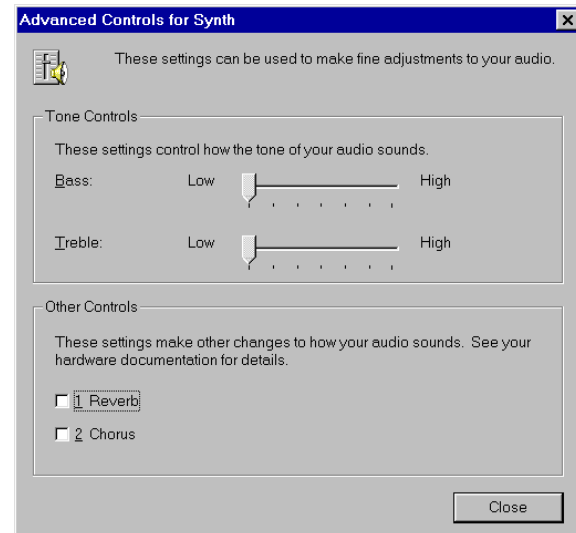


Figure 18

CD Audio

This set of controls allows you to configure the balance and volume for playback of CDs.

Line

This set of controls allows you to configure the balance and volume for playback from Line-In sources.

Microphone

This set of controls allows you to configure the base balance and volume for playback of microphone input.

Advanced Settings

Clicking on the Advanced button will bring up the dialog shown in Figure 19.

Tone Controls

These controls are shadowed to indicate that they have no effect.

Other Controls

Click on the check box to enable Mic Boost to have SonicVibes amplify the microphone input.



Figure 19

Recording Controls

Selecting "Options | Properties" from the Playback Controls window (see Figure 16) will bring up the dialog shown in Figure 20. In the "Adjust volume for" section, click on Recording. You will note that the items listed under "Show the following volume controls:" will change. Make sure the volume control(s) you want to adjust is/are checked, and then click "OK".

You will now see a dialog such as displayed in Figure 21.

Use the Tab key or the mouse to select the balance and volume for a given source.

Balance

Use the left or right arrow keys to adjust the balance (or use the mouse to drag the slider left or right).

Volume

Use the up or down arrow keys to adjust the gain (or use the mouse to drag the slider up or down).

Select

The Select check box allows you to determine which input device will be active for the recording session.

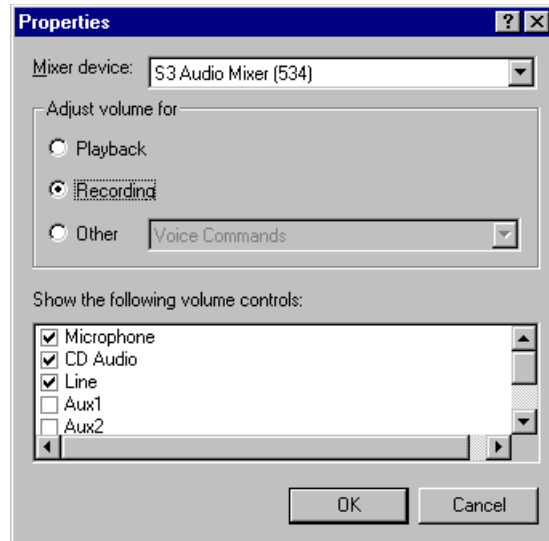


Figure 20

Voice Commands

You will notice in Figure 20, in the “Adjust volume for” section, there is a selection of “Other”. Checking this will allow you to set the volume for voice command input through either a microphone or other auxiliary inputs (see Figure 22).

Advanced Settings

Clicking on the Advanced button will bring up dialog allowing you to adjust the tone and other controls.

Tone Controls

These controls are shadowed to indicate that they have no effect.

Other Controls

Click on the check box to enable Mic Boost to have SonicVibes amplify the microphone input



Figure 21

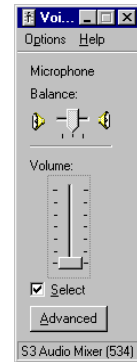
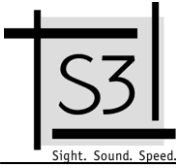


Figure 22



APPENDIX C. USING SonicVibes WITH LEGACY GAMES

The SonicVibes sound board is Sound Blaster Pro legacy games compatible. This means that it will work with all or nearly all contemporary games. Games which were designed for Windows 95 or which can be run from Windows 95 in a DOS box will generally require no special DOS drivers. These games receive the sound input directly from Windows itself using the SonicVibes Windows 95 drivers.

Other, DOS real-mode legacy games, games which cannot be run from Windows 95 or in a DOS box, will require that your computer support Distributed DMA (DDMA). Since these games do not know how to receive data from a sound device on the PCI bus, SonicVibes relies on DDMA to, in effect, fool the games about where they are getting the sound. If your system does support DDMA, you will need to install the DOS Legacy driver before configuring the game (see "DOS Legacy Driver" for instructions for installing this driver).

When you are ready to configure the games, you will find that, in general, most games allow you to select both a music card and a sound FX card. Older games may attempt to directly detect the type of sound card (often assuming only Sound Blaster® compatibility) or prompt you for the type of card. In this latter case, simply select the Sound Blaster Pro or Sound Blaster.

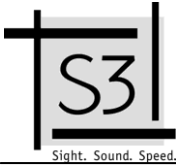
Music Card

This allows you to select which feature, Sound Blaster compatibility or General MIDI, to use for the playback of background music. In this case, Sound Blaster compatibility implies FM synthesis. You can select either Sound Blaster Pro or Sound Blaster. MIDI may be listed simply as MIDI or as General MIDI.

In most cases, selecting General MIDI will result in superior music playback.

Sound FX Card

This allows you to select the source of sound effects. Select either the Sound Blaster Pro or Sound Blaster.



APPENDIX D. TECHNICAL FEATURES

The SonicVibes is a multi-function audio chip, designed to support the PCI bus. It features a single chip implementation of a complete set of audio functions. These functions include Sound Blaster Pro legacy games compatibility, S3FM games compatible FM synthesis, General MIDI Wavetable synthesis; Microsoft DirectSound compatible acceleration via the PCI bus, Microsoft DirectMusic acceleration for Downloadable Sounds using system RAM along with SRS 3D audio enhancement.

Hardware Features

SonicVibes uses a single, true 16-bit stereo CODEC for reduced analog circuitry. It uses sophisticated sample rate conversion for high-quality digital mixing and full-duplex operation with independent playback/record featuring rates from 4 to 48kHz. It includes a complex analog mixer for PCM, Wavetable, FM plus MIC and 4 stereo external analog sources. The hardware features a 16-level/speed compensated joystick timer and interface. There is an MPU401 compatible MIDI UART for external devices, along with a hardware master volume control. Inputs include AUX1, AUX2, CD, LINE-IN and MIC, along with Lineout to amplified speakers.

Other important features include single crystal operation at 24.576 MHz and APM 1.2 compliance.

Software Features

The suite of Windows 95 software drivers for SonicVibes includes client drivers for WAVE, MIDI, FM, Joystick and Mixer functions. Device access and contention is managed through the base driver. There is MIDI support for internal Wavetable and FM synthesis, along with support for external MIDI devices through the MPU401 UART port. PCM playback and record is supported through the WAVE driver, which handles setup and execution of PCM DMA activities.

The Mixer driver is contained within the WAVE driver and includes mixer support for all logical devices and access to extended features, such as SRS, reverb and chorus functions.

MIDI instruments are defined via Wavetable ROM(s) or in dedicated system RAM. Using system RAM enables dynamic bank loading and interactive music and sound through the DLS implementation.